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CEO Denys Global

Leo Weixler
Executive Director Bauer Maschinen

The logo features a stylized bar chart with four bars of varying heights in shades of gray. Below the chart is a dark green rectangular box containing the word "dreamcutter" in white, lowercase, sans-serif font.

dreamcutter



IPLOCA 2022 Annual Convention

We have a dream...

Underground construction

with a minimum impact on the surface.





View of construction work on the Metropolitan Railway near King's Cross, circa 1860



Schuhman – Josaphat (Brussels, 2008 – 2012)

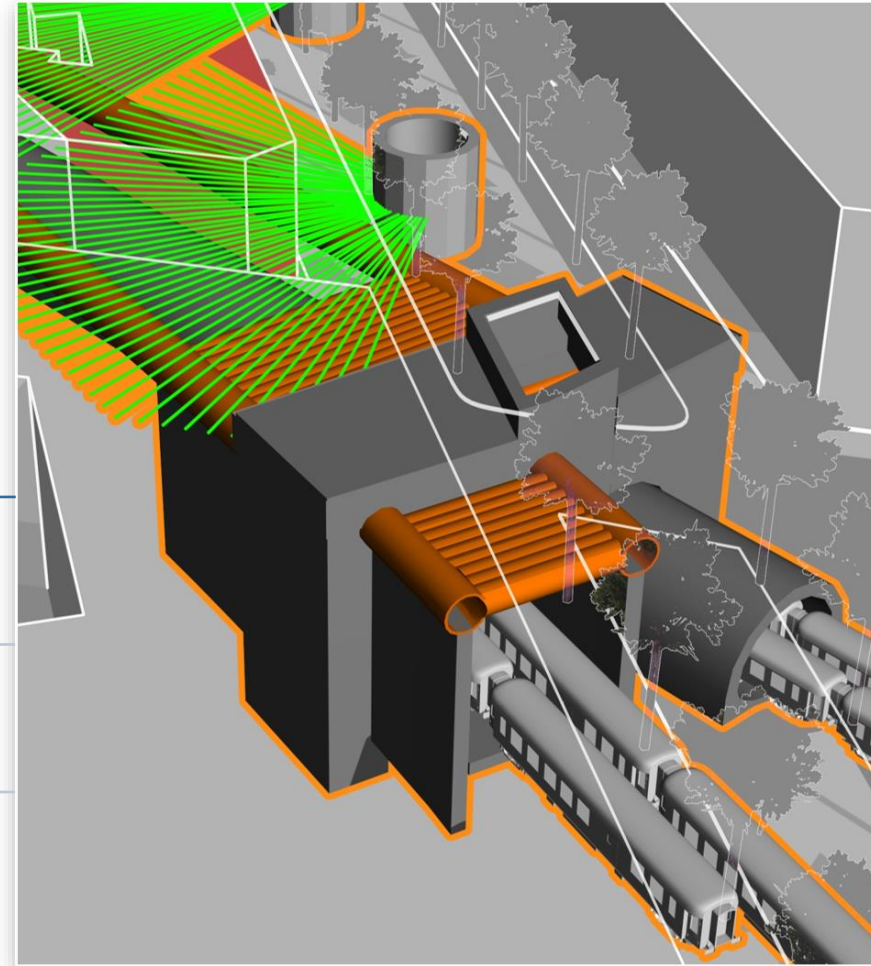
Underground railroad connection

by **DENYS**

Minimal socio- economic impact

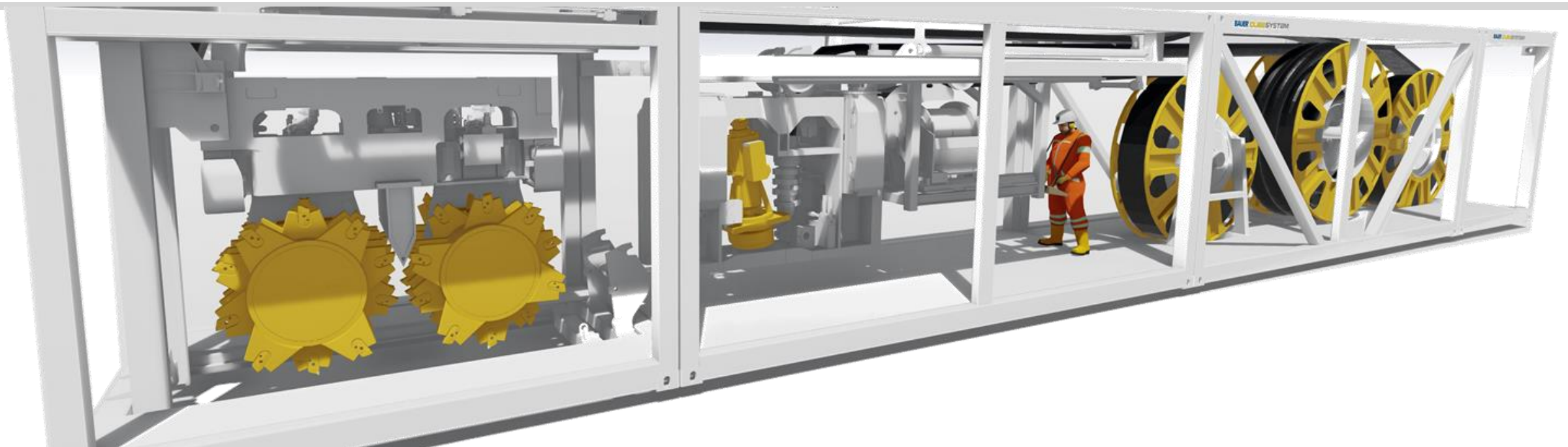
Installation from a 6 m by 8 m vertical shaft at the surface

Partly underneath historic buildings



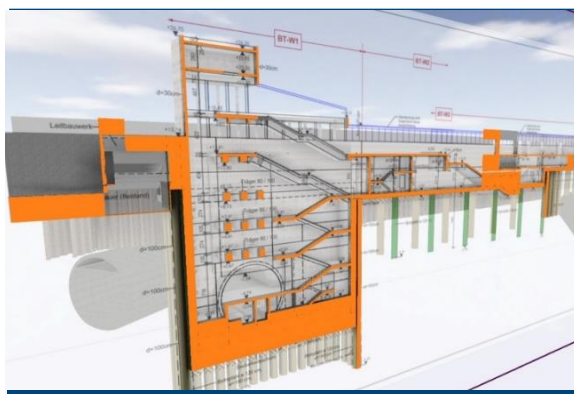
1

Motivation

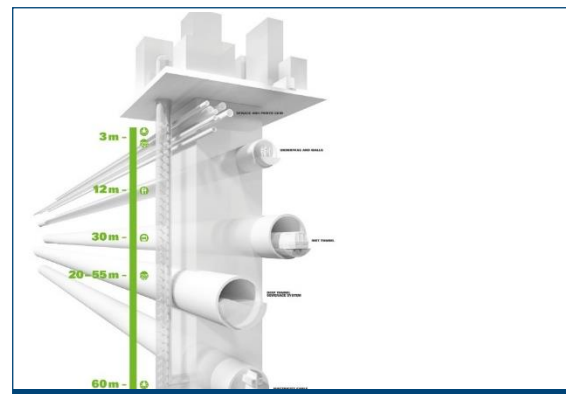




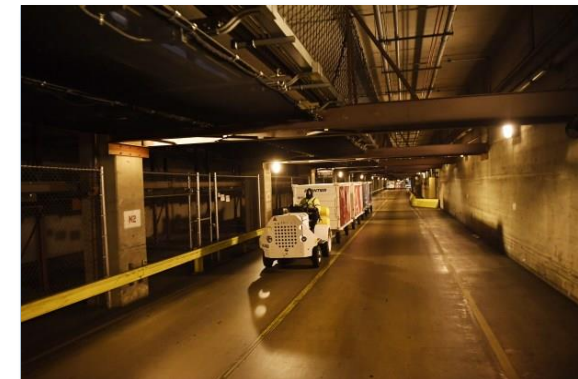
Underground parking space



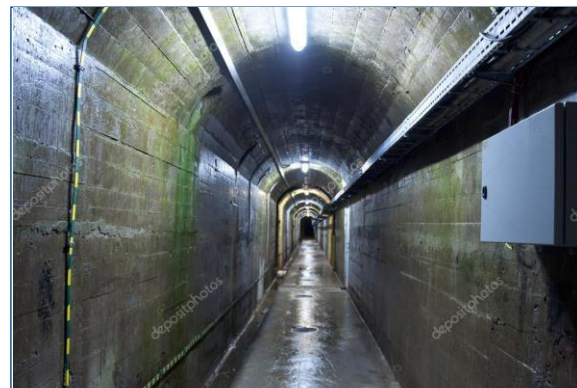
Addition of underground space to existing metros/building



Working under the city in confined spaces



Logistic space under airport/runway



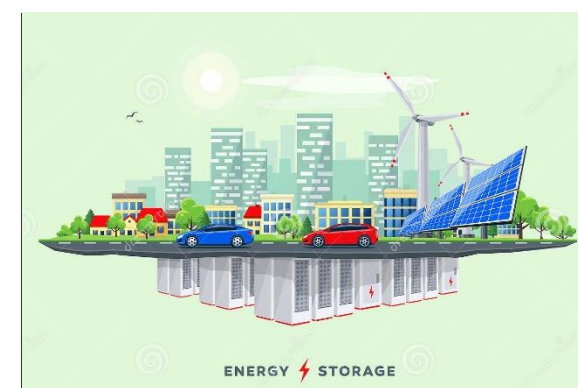
Construction of dams



Water storage / underground building



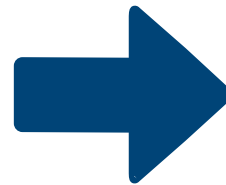
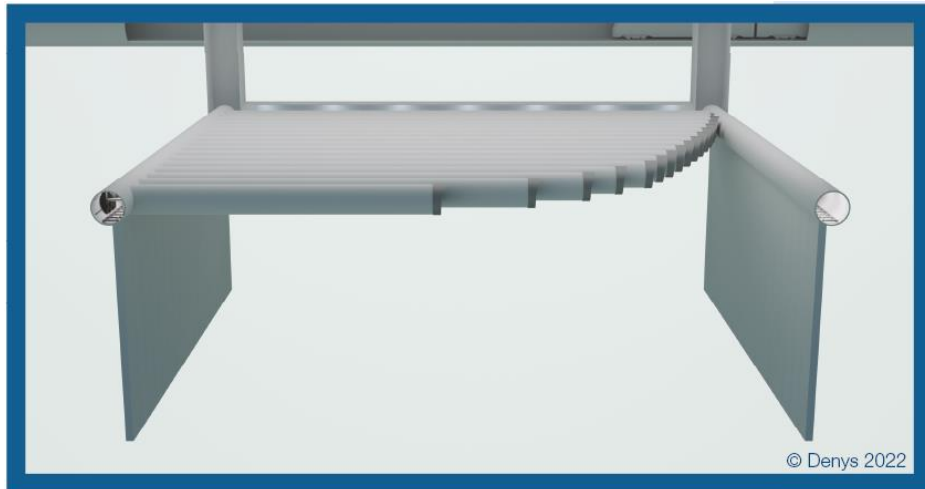
Extending / renovation of utility tunnels



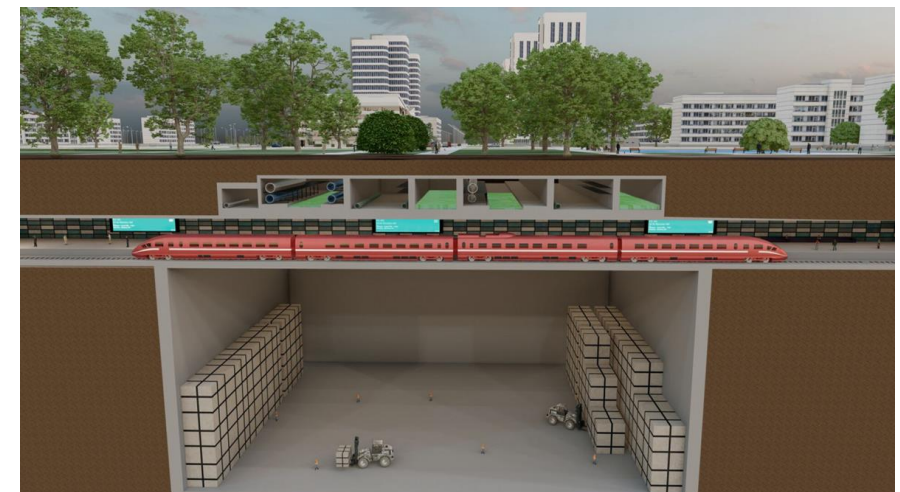
Creating space for energy storage underground

Underground ...

Create underground space for ...



Parking, logistic space, water storage, ...

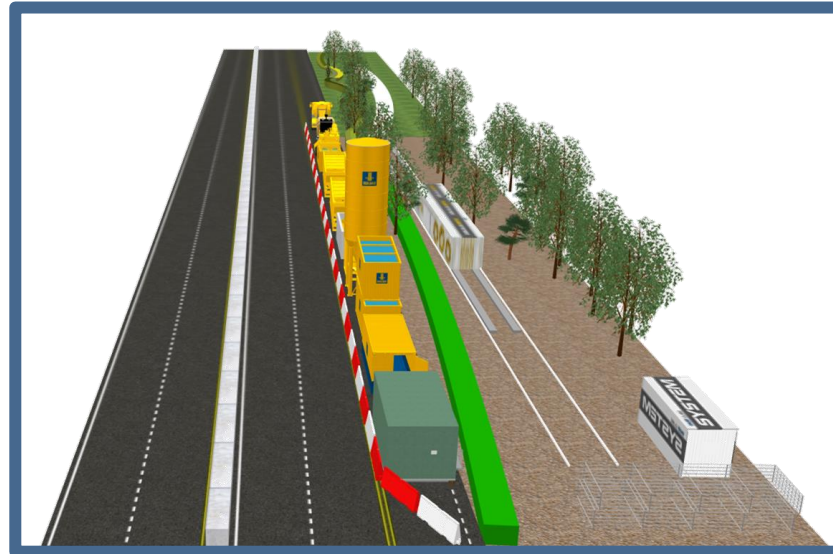


... and in confined space

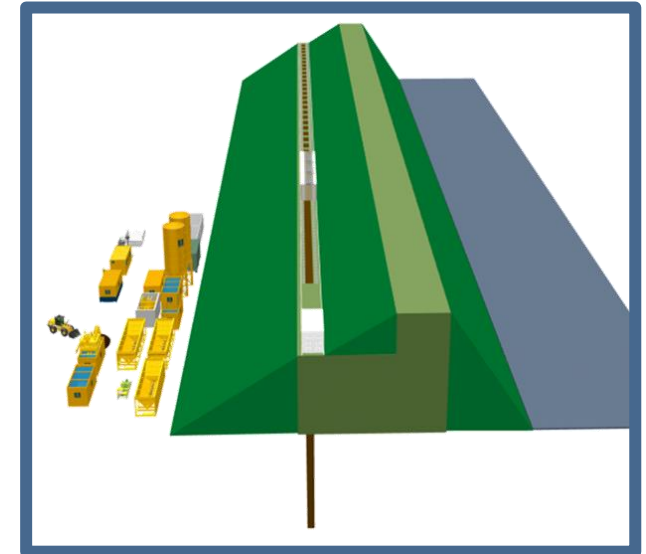
Under bridges,



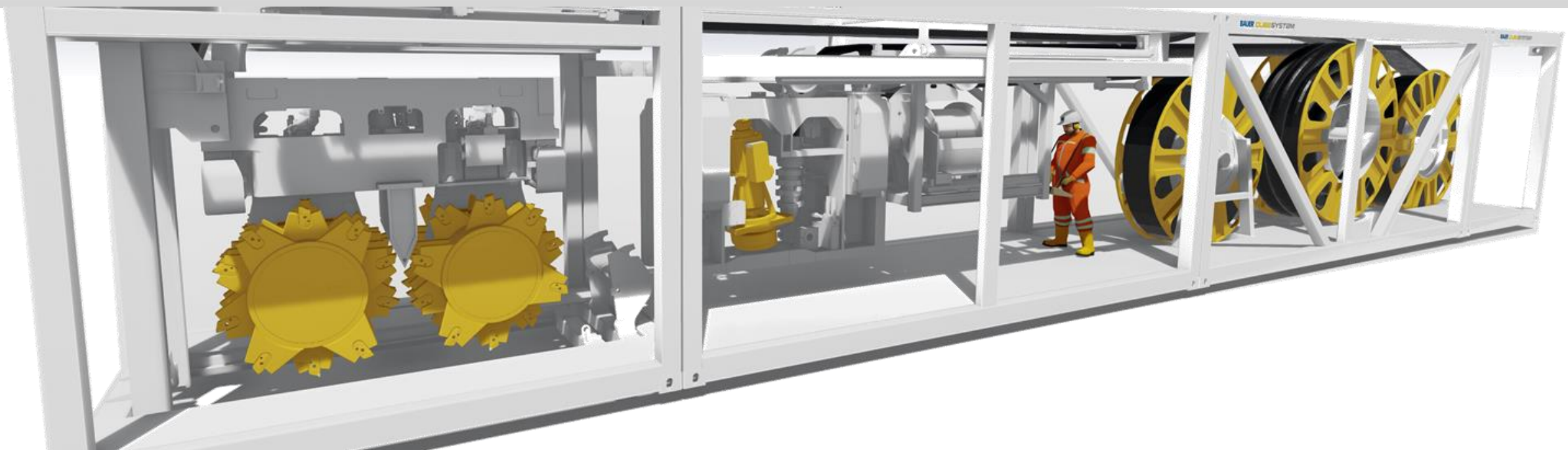
in very tight spaces,



on top of dams, ...



2 Our Background



between the construction specialist



and the equipment specialist **BAUER Maschinen GmbH**

Combined experience



1984: first BAUER Trench cutter

37 years experience in trench cutter units

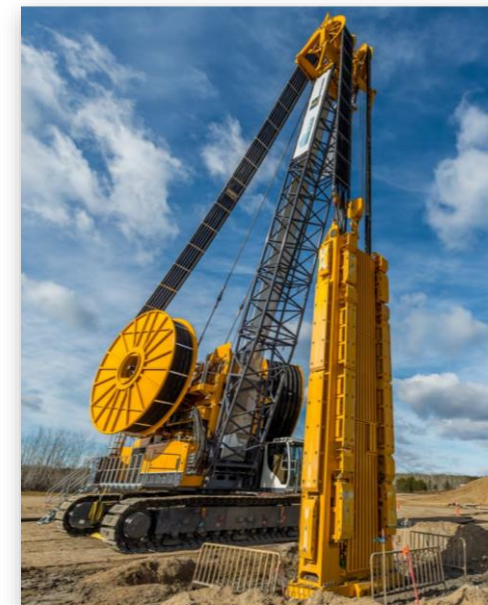
More than **350 units** operating worldwide

Many successful **challenging projects**

Up to 2.5 m
wall thickness

Down to 250 m

Rock strength
up to 200 MPa



2019: FalCon project – 250 m record

- More than **60 years** of experience in tunneling and foundations works



Schuhman – Josaphat (Brussels, 2008 – 2012)

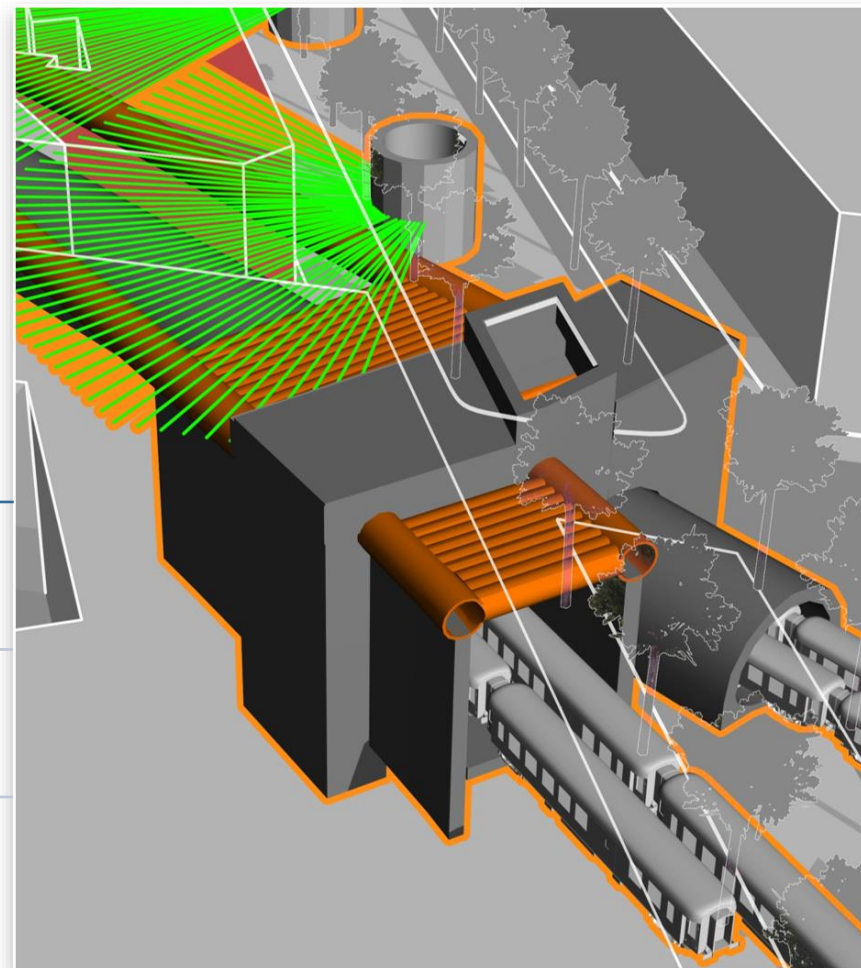
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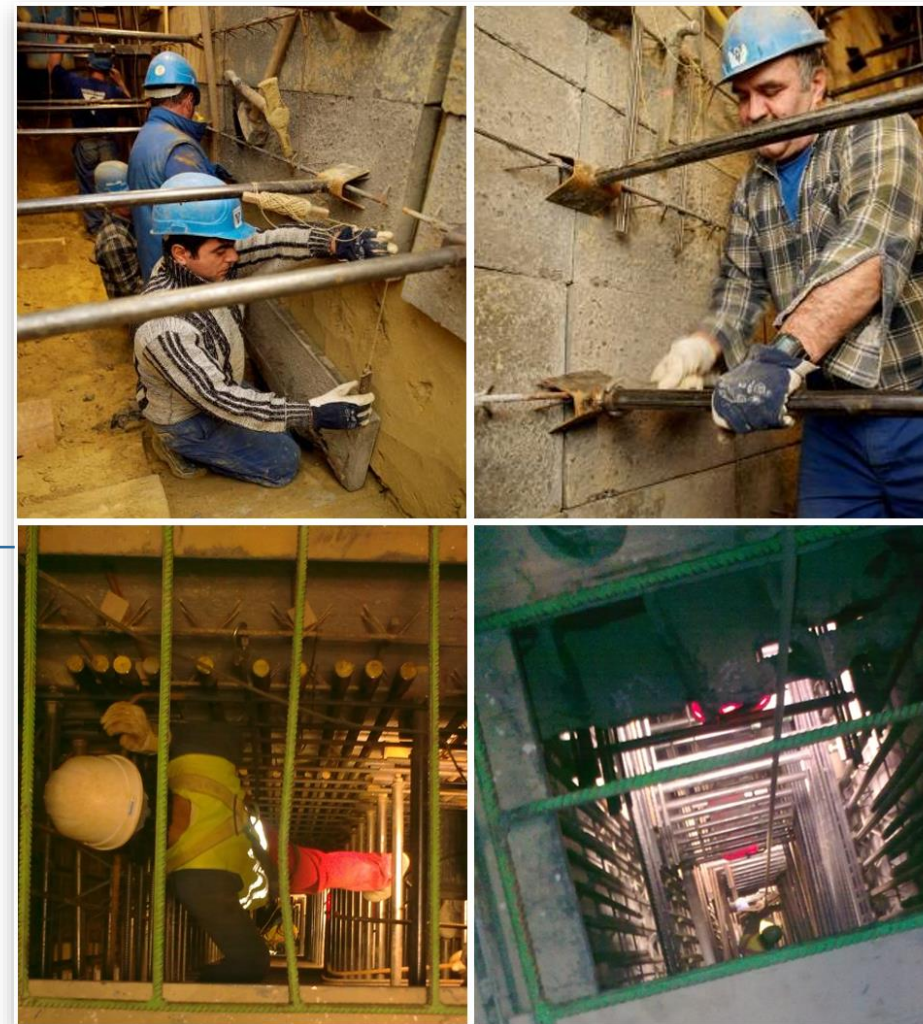
by **DENYS**

Deep braced excavations

State of the art

Risk analysis	Danger of falling persons and objects
	Presence of harmful gases
	Hazard of collapse of the trench
	Long term health issues due to non-ergonomic work conditions

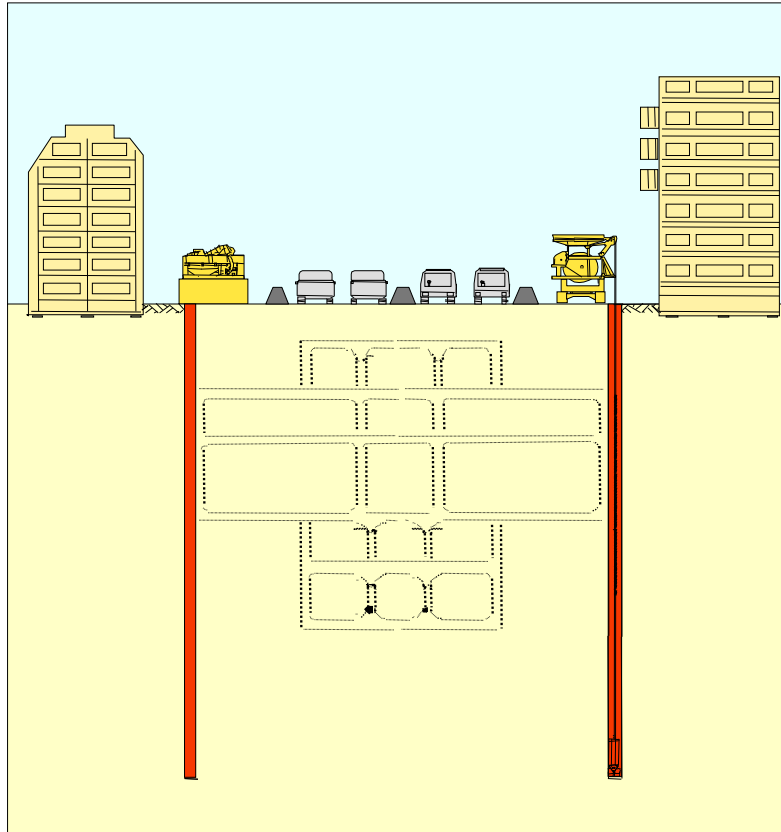
**Deep braced excavations are applied by lack of alternative methods.
Only possible above groundwater.**



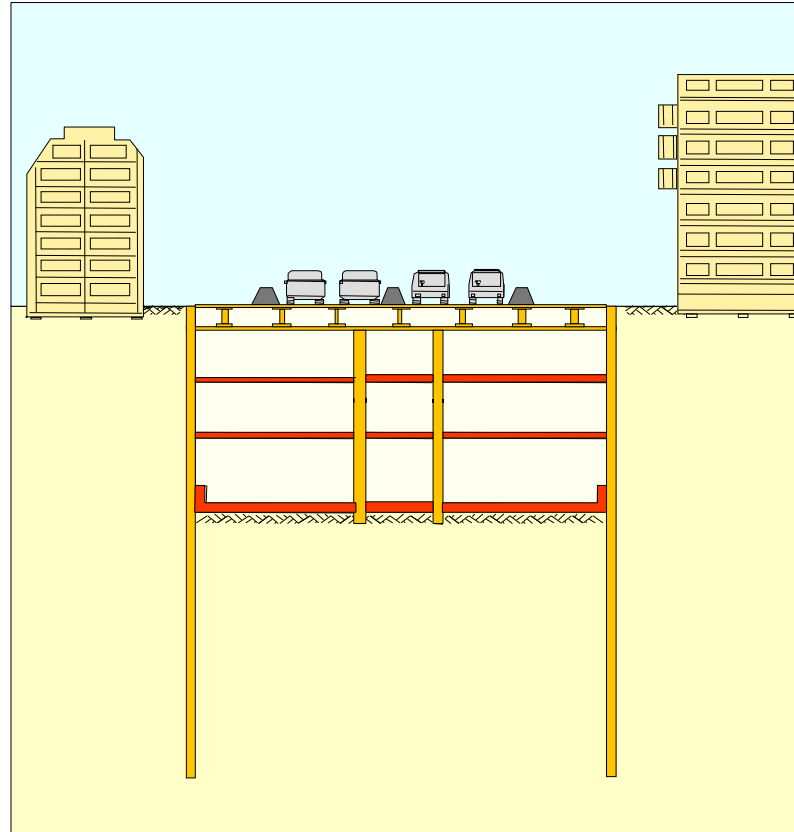
Tokyo Subway Station - Lowhead Cutter in 1991



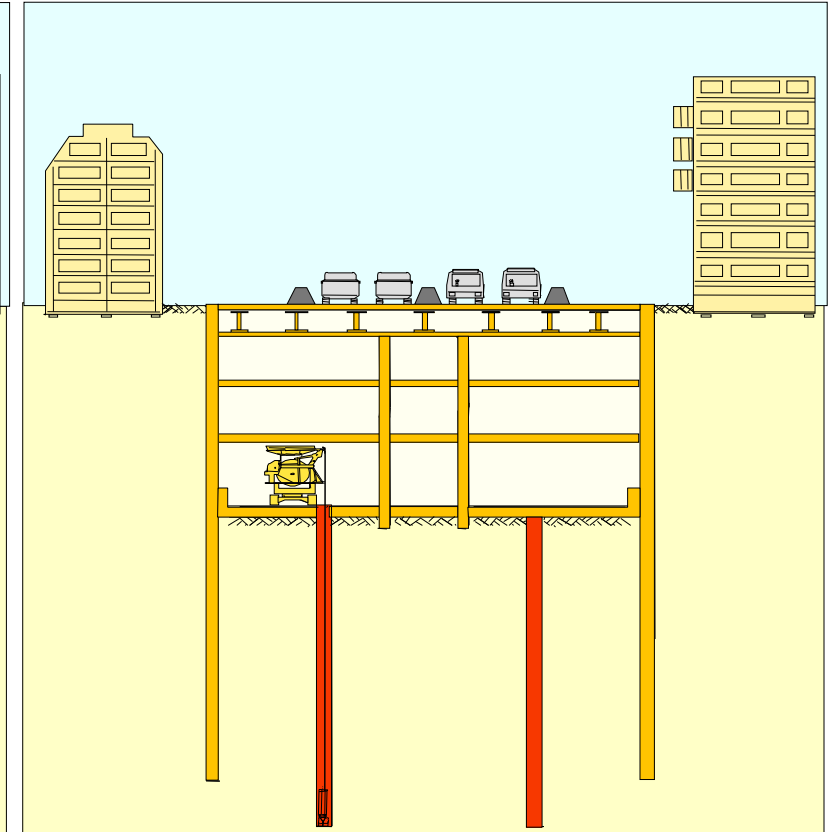
Tokyo Subway Station



Construction of **outer walls**



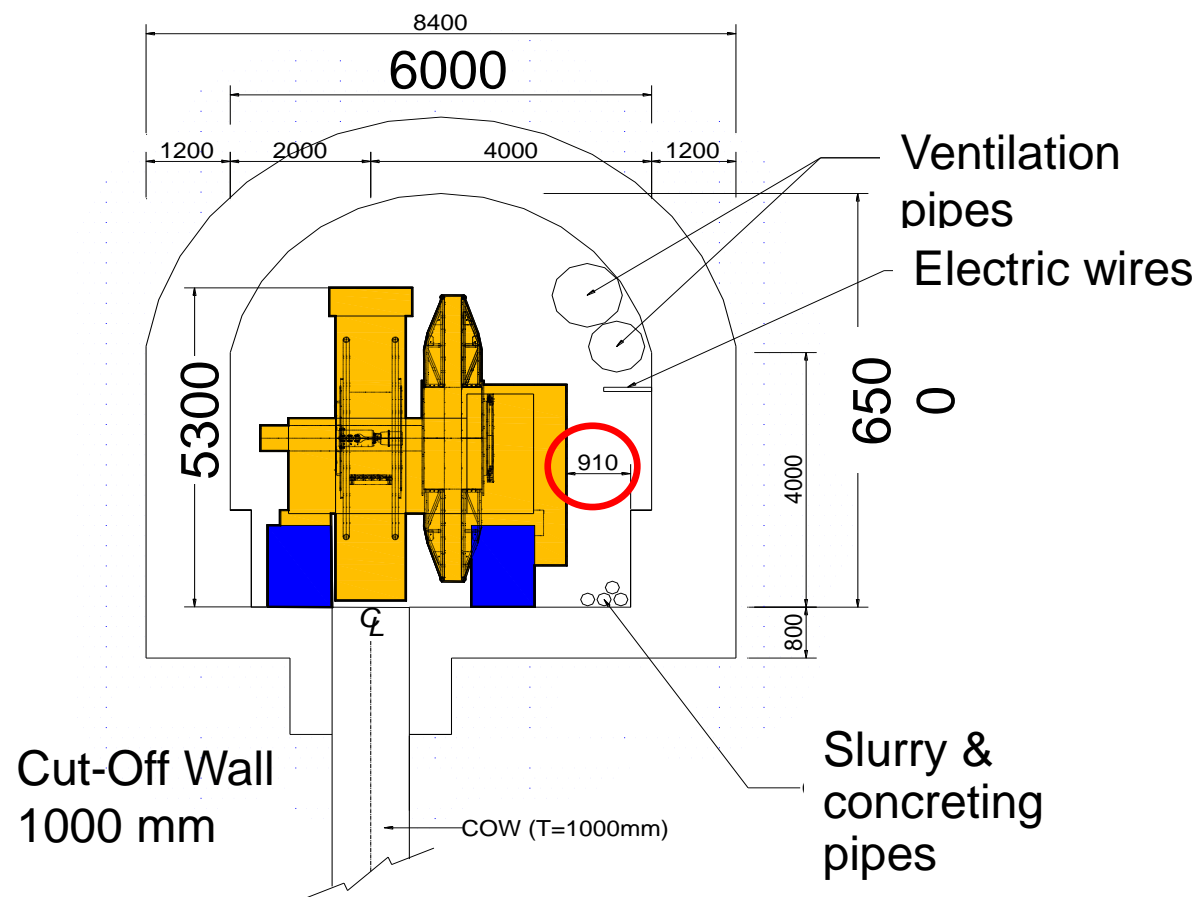
Construction of the **upper floors**



Construction of **inner walls**
from the lowest level

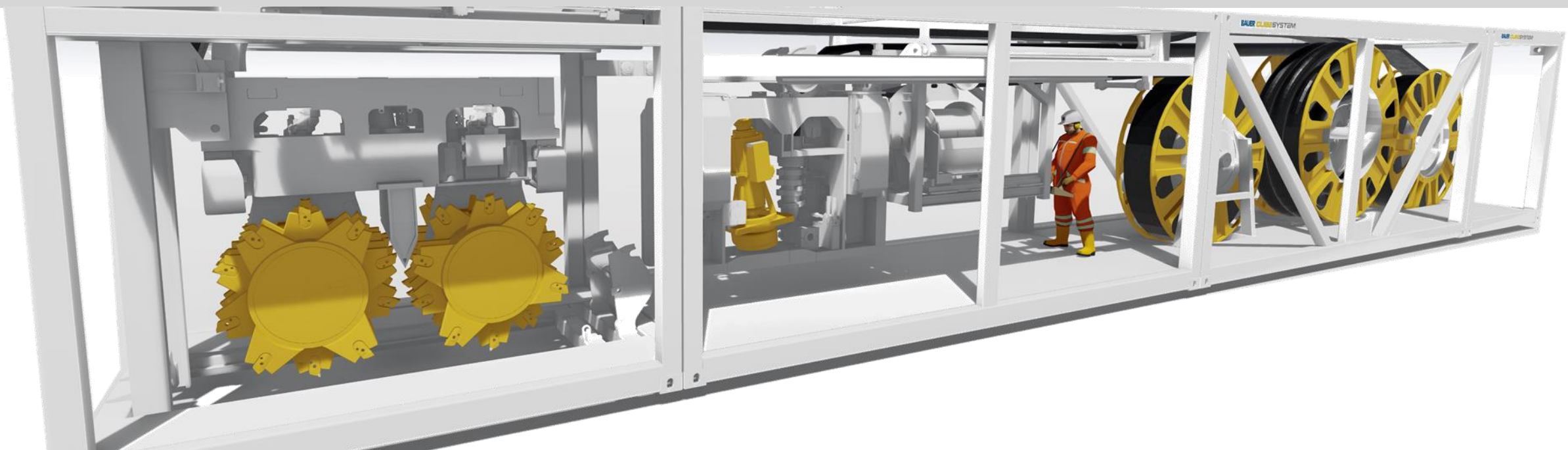
Working in confined space

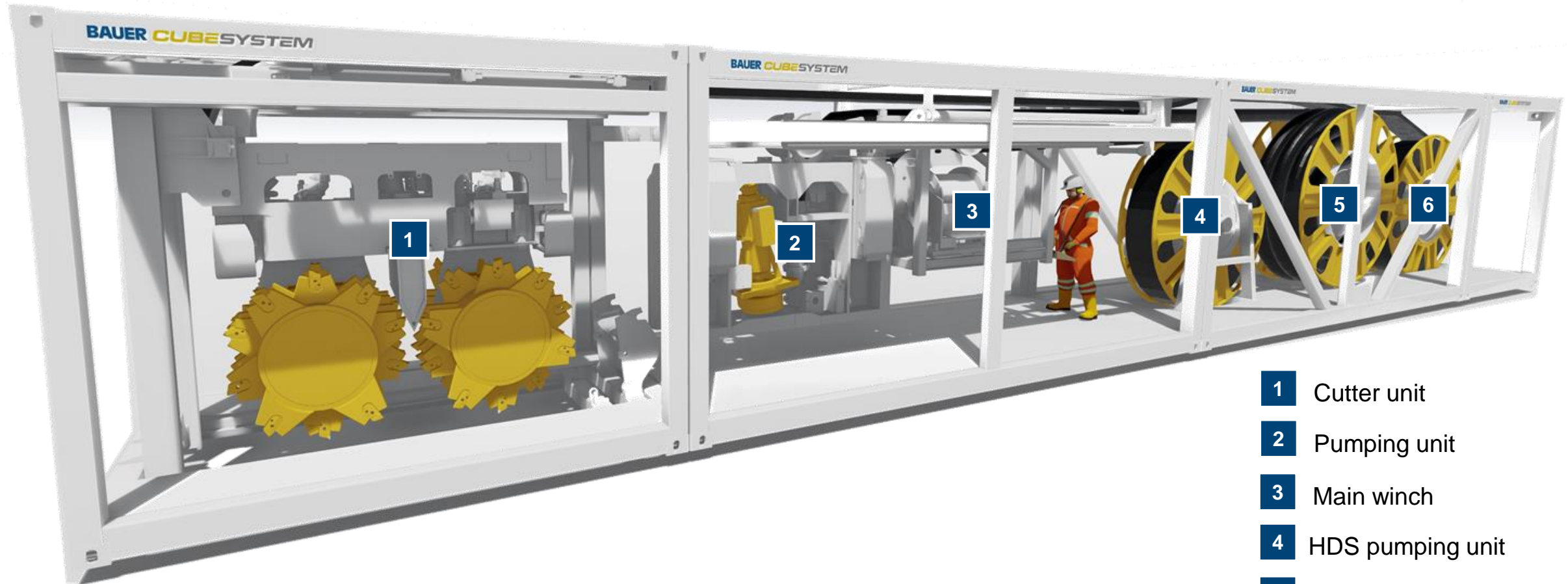
Yeleh Dam in Sichuan, China



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The Cube System

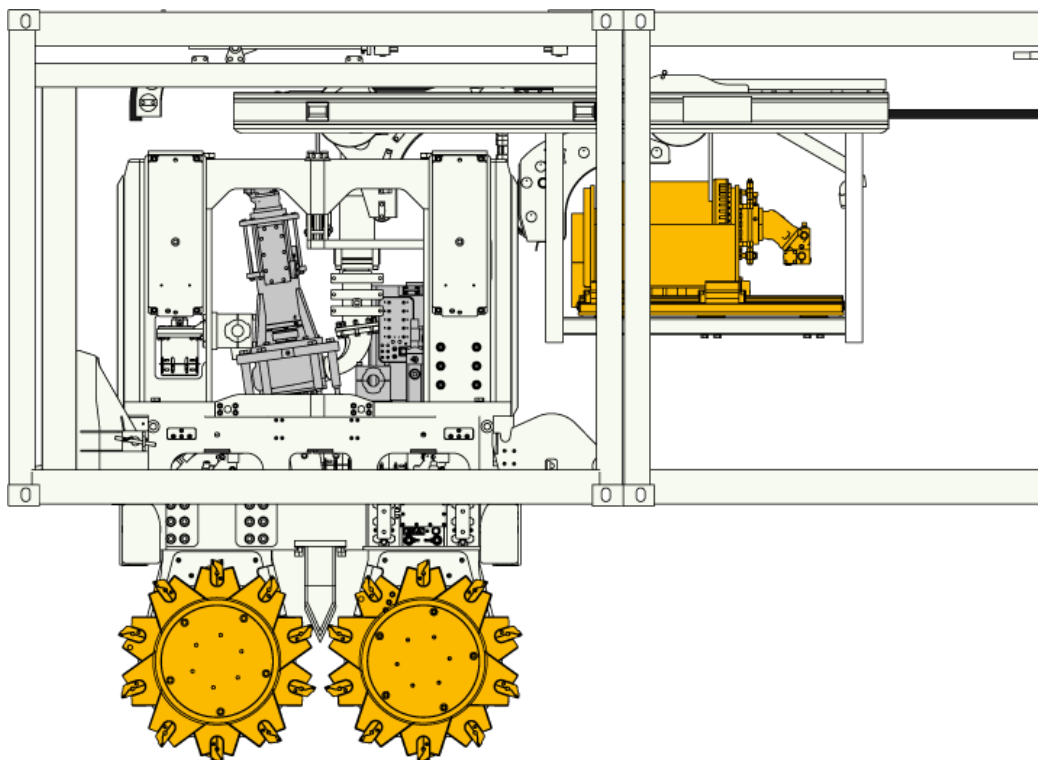




- 1 Cutter unit
- 2 Pumping unit
- 3 Main winch
- 4 HDS pumping unit
- 5 HDS mud hose
- 6 HDS cutting unit

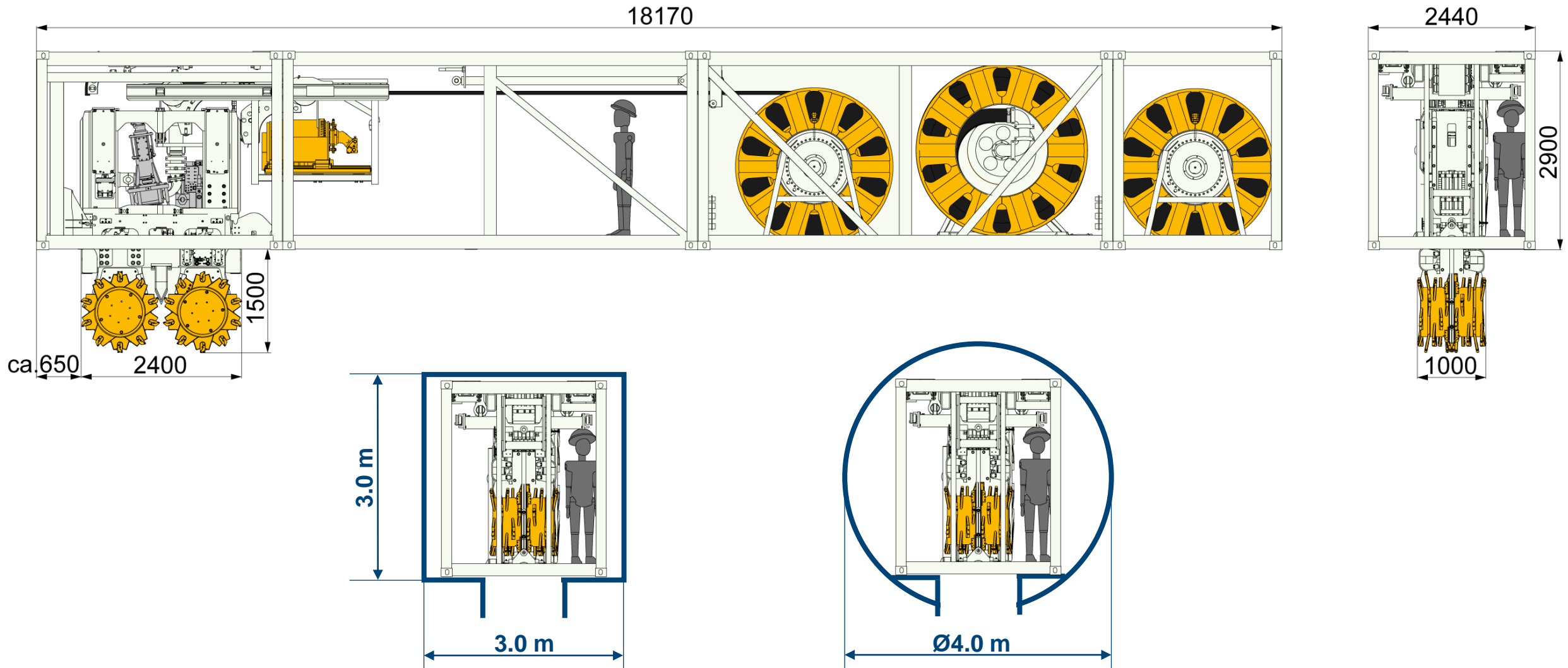
Cutter

Cutter assembled



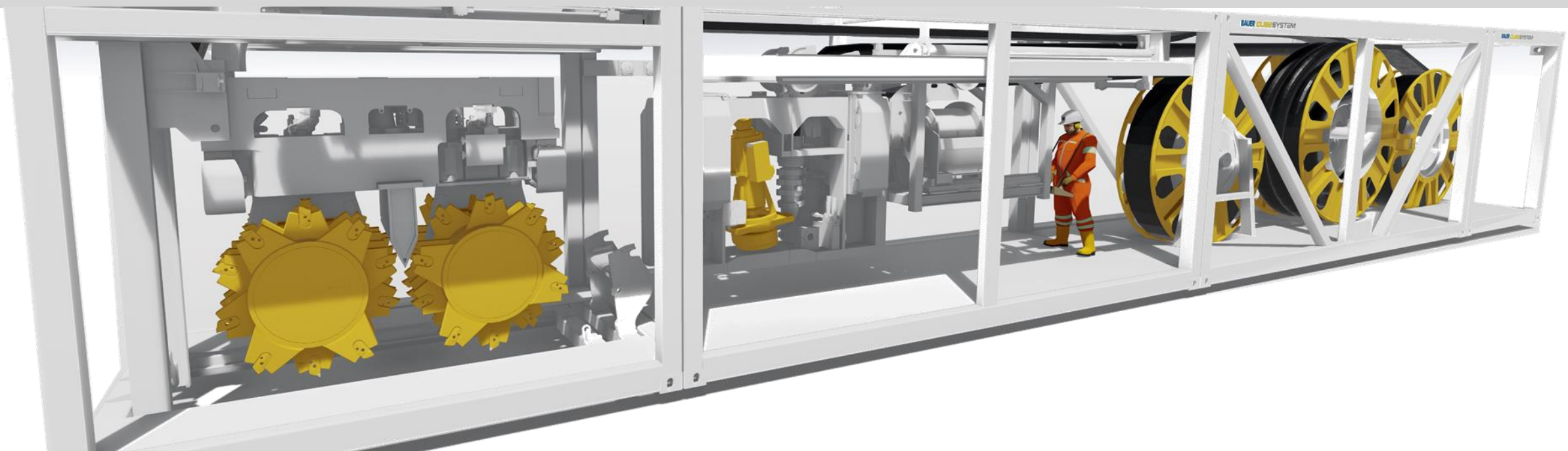
Technical Specifications

Cutter height	3,600 mm
Trench length	2,400 mm
Trench width	640 mm – 1,000 mm
Steering flaps	8 pc
Hook load	20 t
Min. weight	12.8 t
Max. weight	14.3 t
Mud pump	127 mm (5")
Gearbox	BCF 5 (2 x 46 kNm)



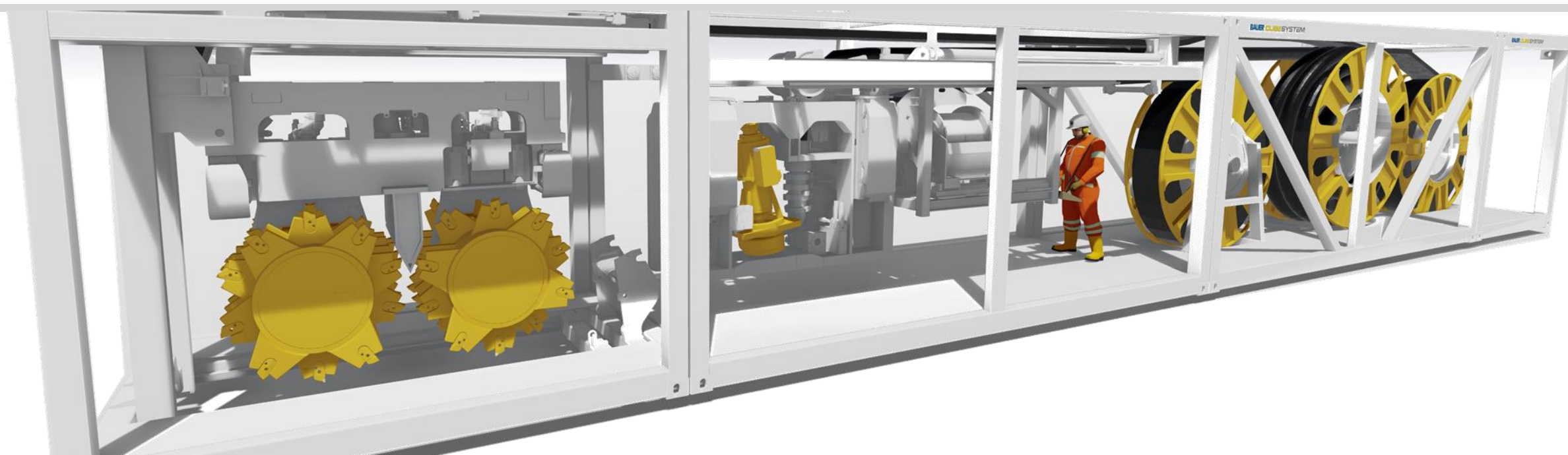
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How it works





5 BAUER Cube System Test



Test site in Aresing





Results

- Progress rates
 - 15-25 cm/min primaries
 - 1-5 cm/min for “rock embedment”
 - 42 m trench depth is the limit for HDS drums and winch
 - Time to connect cutter unit and pumping unit is about 15 min
 - Min. pre-excavation of 1,5 m
- Installation of reinforcement
 - Around 15 min per connection of segments
 - Connection height close to bottom of container
- Concreting
 - Around 3 hours (for 40 m³) using concrete pump
 - Installation of pipes by small lifting device around 1 h to 40 m

The logo features a stylized bar chart with four vertical bars of increasing height from left to right, positioned above a dark green rectangular box containing the word "dreamcutter" in white lowercase letters.

dreamcutter



A cooperation between the construction specialist **DENYS**
and the equipment specialist

